

AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph beginning at page 1, line 9, as follows:

A spark plug including a chip for spark discharge on at least one of the central electrode and the ground electrode is disclosed in Japanese patent application provisional publications Nos. 6-188062 and 11-3765. Such a prior art spark plug includes a chip for spark discharge on a base material which is at least one of the ground electrode and the central electrode by laser welding. The chip includes ~~novel metal~~ noble metal or an alloy including the ~~novel metal~~ noble metal. The laser welding between the chip and the base material forms a welding portion at an interface between the chip and the base material, wherein there is a large difference in linear expansion coefficient between the chip (Ir alloy, Pt alloy, or the like) and the base material (Ni-base alloy or the like). Because the chip is fixed to the base material through the welding portion by the laser welding, the chip is fixed to the base material with a weld (melted and solidified) portion, so that the laser welding has a higher reliability of connection than the resistance welding.

Please amend the paragraph appearing at page 2, line 14 – page 3, line 10, as follows:

According to the present invention, a first aspect of the present invention provides a spark plug comprising: a tubular housing; a central bar electrode supported by said tubular housing in said tubular housing with electrical insulation therebetween; and a ground electrode extending from one end of said tubular housing; a chip, arranged at an end surface of a base material which is at least one of said central bar electrode and said ground ~~electrode, on a side of said one end of said tubular housing,~~ electrode for spark discharge through said central bar electrode and said ground electrode, said chip including a ~~novel metal;~~ noble metal, and a weld portion between said base material and said chip including first to n^{th} weld layers formed by materials of said chip and said base material by laser welding to fix said chip to said base material,

wherein said first to n^{th} weld layers are successively arranged from a side of said base material in order of said first to n^{th} weld layers in a distance increasing direction from said base material which is substantially perpendicular to said end surface, each of said first to n^{th} weld layers has at least an overlap portion with a neighbor of said first to n^{th} weld layers, a sum of a maximum first sectional area of said first layer and second sectional areas of said second to n^{th} weld layers at said overlap portions is 1.4 times a third sectional area of said chip, said first, second, and third sectional areas are along said end surface, and n is a natural number more than one.

Please amend the paragraph appearing at page 3, line 20 – page 4, line 9, as follows:

According to the present invention, a fourth aspect of the present invention provides a spark plug comprising: a tubular housing; a central bar electrode supported by said tubular housing in said tubular housing with electrical insulation therebetween; a ground electrode extending from one end of said tubular housing; a stress releasing layer, arranged on a side of said one end of said tubular housing on an end surface of a base material which is at least one of said central bar electrode and said ground electrode; a chip, being arranged on said stress releasing layer and including a ~~new~~ metal, noble metal, for spark discharge through said central bar electrode and said ground electrode; and a weld portion formed between said base material and said chip with materials of said base material, said stress releasing layer, and said chip by laser welding to fix said chip to said base material, wherein a linear expansion coefficient of said stress releasing layer is between those of said base material and said chip.

Please amend the paragraph appearing at page 4, line 20 – page 5, line 7, as follows:

According to the present invention, a seventh aspect of the present invention provides a method of producing a spark plug including a tubular housing, a central bar electrode supported by said tubular housing in said tubular housing with electrical

insulation therebetween, and a ground electrode extending from one end of said tubular housing, comprising the steps of: providing a stress releasing layer on a side of said one end of said tubular housing on an end surface of a base material which is at least one of said central bar electrode and said ground electrode; providing a chip including a ~~novel metal~~ noble metal for spark discharge on said stress releasing layer and having a linear expansion coefficient between those of said base material and said chip; and fixing said chip to said base material by forming a weld layer at an interface portion of said base material, said stress releasing layer, and said chip.

Please amend the paragraph beginning at page 5, line 16, as follows:

According to the present invention, a ninth aspect of the present invention provides a spark plug comprising tubular housing; a central bar electrode supported by said tubular housing in said tubular housing with electrical insulation therebetween; a ground electrode extending from one end of said tubular housing, at least one of said central bar electrode and said ground electrode servicing as a base material; a weld portion on said base material; and a chip on said weld portion, including a ~~novel metal~~ noble metal for spark discharge through said central bar electrode and said ground electrode; wherein a linear expansion coefficient of said weld portion is between those of said base material and said chip.

Please amend the paragraph beginning at page 10, line 8, as follows:

At the end surface (connecting surface) 31 of the central electrode, a chip 50 including ~~novel metal~~ noble metal or an alloy including the ~~novel metal~~ noble metal is welded to the central electrode as a base material by the laser welding with forming weld portion 60 by the laser welding. That is, the weld portion 60 connects the chip 50 to the central electrode 30. The weld portion 60 is provided by melting materials of the chip 50 and the central electrode 30 by the laser welding and then, the melted solidified.

Please amend the paragraph appearing at page 10, line 21 – page 11, line 5, as follows:

More specifically, the spark plug 100 includes the tubular housing 10, the central bar electrode 30 supported by the tubular housing 10 in the hole 36 of the tubular housing 10 with electrical insulation therebetween; and the ground electrode extending from the one end 12 of the tubular housing 10. One end of the central electrode 30 substantially confronts one end 41 of the ground electrode 40. The chip 50 is arranged at the end surface 31 of the base material which is at least one of the central bar electrode 30 and the ground electrode 40, on a side of the one end 12 of the tubular housing 10, for spark discharge through the central bar electrode 30 and the ground electrode 40. The chip 50 includes a ~~novel metal~~ noble metal.

Please amend the paragraph beginning at page 28, line 6, as follows:

Moreover, in this invention, the shapes of the central electrode 30, the ground electrode 40, and the chip 50 can be modified in designing. That is, in the spark plug of which base material (at least one of the central electrode 30 and the ground electrode 40) is connected to the chip 50 made of ~~novel metal~~ noble metal or a alloy including the ~~novel metal~~ noble metal by layer welding, this invention provides main features providing a higher strength in connection between the base material and the chip 50 by devising the structure of the weld portion and by providing the stress releasing layer, and the other portions can be modified.